



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of WOODS

)  
) Art Unit: 2673

Serial Number 09/534,474

)  
) Examiner: Lao

Filed March 24, 2000

)  
) Atty Docket: WOO001

For: USER FRIENDLY KEYBOARD

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Respectfully submitted,

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Registration Number: 33,323

Date: December 30, 2002



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#16/Reply  
Brief  
1/7/03  
K. Hannell

APPLICANT'S REPLY BRIEF

Assistant Commissioner of Patents  
Washington, D.C. 20231

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Dear Sir:

The Applicant in the above-identified U.S. patent application submits this Reply Brief in support of the Appeal filed on this application and in response to the Examiner's Answer dated October 29, 2002. Initially, the Applicant is pleased to note that the Examiner has withdrawn the formal rejection of claims 1 and 13-20. Therefore, the arguments presented in Section II from page 10 to the top of page 12 in the Appeal Brief filed on September 25, 2002 is deemed moot.

As indicated in the Appeal Brief, this application includes independent claims 1, 2, 7 and 13. Independent claim 1 represents a combination claim including all the limitations of the independent claims 2, 7 and 13. As the Examiner has, at best, basically addressed the limitations of independent claims 2, 7 and 13 in the "Response to Argument" section of the Examiner's Answer, this Reply Brief will particularly concentrate on the difference between this claimed subject matter and the applied prior art. Therefore, the Applicant essentially relies upon the arguments presented in the previously filed Appeal Brief with respect to the remaining claims. Although the Final Office action and, correspondingly, the Appeal Brief address these independent claims with claim 7 first, claim 13 second and claim 2 last. For purposes of this Reply

Brief, additional arguments concerning the differences between the subject matter of claims 2, 7 and 13 verses the applied prior art will be addressed sequentially.

**I. Additional Comments Regarding Rejection of Independent  
Claims 2 and Dependent Claim 22**

As discussed in the Appeal Brief, independent claim 2 is concerned with a keyboard having an array of keys arranged in multiple rows, with the keys including letter keys, a tab key, a backspace key, at least one shift key and at least one function key. Each of the letter keys corresponds to a respective letter of an alphabet. Most importantly, one of the rows must include selected ones of the letter keys to spell out "at least three, consecutively arranged multi-lettered words when read from left to right." This claim has only been rejected based on the teachings in Klauber (U.S. Patent No. 5,620,267) in view of Montgomery (U.S. Patent No. 4,211,497).

The Klauber patent is particularly directed to a keyboard including a QWERTY key arrangement of a conventional type. The difference between a standard keyboard as shown in Figure 1 of the '267 patent and the invention set forth by Klauber et al. is that a standard space bar is shortened in order to accommodate at least one additional control key. The rejection of claim 2 as set forth in the Examiner's Answer adds a statement concerning Klauber disclosing that the location of keys on a keyboard can be changed (note that reliance on such a teaching was not presented in the Final Office Action or at any time during the prosecution of this application). Regardless, none of the letter keys in any of the embodiments disclosed by Klauber differ from that set forth in a conventional QWERTY keyboard. To this end, the Examiner has indicated that one of ordinary skill in the art would consider modifying Klauber in view of Montgomery and has specifically referenced the two multi-letter words "PITHERB" which, although indicated to be shown in Figure 12, is actually illustrated in Figure 18. In essence, as understood, the Examiner has indicated that it would be obvious to redesign all the letters in the keyboard to Klauber

to be arranged in the format set forth in Figure 18 of Montgomery. In doing so, it appears inevitable that the Examiner would have to employ five rows of letter keys as taught by Montgomery in connection with the embodiment of Figure 18 in place of the three rows of letter keys of Klauber. Even if one overcame the hurdle of why one would consider modifying Klauber in this manner given that Klauber desires to maintain the conventional letter key positioning and to only alter the space bar zone, the Examiner still only ends up with one of the rows of letter keys arranged to spell out just two multi-letter words. As indicated above, claim 2 requires at least three, consecutively arranged multi-letter words. Out of nowhere, the Examiner has decided that it be obvious to employ the adjacent letters "ITHEROF." The Applicant can find no basis in any of the prior art that would put these three words next to each other in the same row consecutively on a keyboard.

Page 7 of the Examiner's Answer also starts a discussion of Watanabe at the bottom of page 7 and the top of page 8. This discussion is simply not understood as this other reference, although utilized in connection with other claims in this application, was not officially mentioned with respect to the rejection of these claims.

On the bottom of page 10 of the Examiner's Answer, the Examiner sets forth for arguments concerning the Montgomery keyboard having two multi-letter words when read from left to right. The Applicant agrees with this assessment. It is the leap that the Examiner takes in going from two multi-letter words (which is seen to simply be a coincidence in connection with the Montgomery patent as there is no discussion of any particular desirability to arrange words in this fashion) to having three sequential multi-letter words as required by the present invention. Page 11 of the Examiner's Answer seems to raise a concern on the part of the Examiner that, if the present application were to issue to a patent having three sequential common words in one row, the Patent Office would be required to issue patents having four sequential common words, five sequential common words and so on. To this end, the Applicant would argue that, first of all, the present disclosure would constitute prior art for potential use by the Examiner. However, the Applicant would also argue that if

someone else was to propose a keyboard having a single row with more consecutively arranged multi-letter words than that encompassed by the present invention and the Applicant for that patent had a basis as to the advantages achieved in specifically arranging a row of letters in that particular manner which is not disclosed or suggested in the prior art, then certainly another patent should issue in this field.

As considered evident from the prosecution in this case, this Examiner is of the opinion that arranging keys in any shape, form or fashion on a keyboard is obvious without any specific teaching in the prior art. The Applicant would specifically request the Examiner to put on the record comments made by the Examiner to the undersigned to this extent. That is, during telephone conversations conducted with the Examiner, she has conveyed her opinion to the undersigned that she does not believe any claims directed to rearranging known keys on a keyboard, or employing any duplicate keys on a keyboard, constitutes patentable subject matter. To this end, it is questioned whether even the Klauber patent utilized as a main reference here would have been considered allowable by the present Examiner given that Klauber merely replaces a standard space bar with a shortened space bar and a supplemental control key. In any case, the simple matter of fact is that the prior art does not disclose or suggest at least three consecutively arranged multi-letter words when read from left to right in a single letter row of a keyboard such that, without a teaching to this effect in the prior art, the Examiner should allow this claim.

It would seem only logical to the Applicant that, even if the combination presented by the Examiner were conceived, there exists, at most, seven letters in the largest row disclosed by Montgomery such that the requirement of claim 22 wherein one of the multi-letter words is a four letter word and another one of the multi-letter words is a three letter word would use up all the possible letters of Montgomery in these two words, yet the claim would still require an additional multi-letter word in accordance with the present invention.

When considering the patentability of this aspect of the invention, it should be realized that arrangement of keys in a standard QWERTY keyboard can be difficult to master. The undersigned actually learned on a typewriter having all the keys painted over so that the keys could not be referenced. With the present invention, memorizing the entire keyboard is greatly simplified. In fact, even a child just learning to type could essentially memorize the keys in the home row upon a quick review. The manner in which the present invention achieves, this advantageous feature of the invention is not at all suggested in the applied prior art.

## **II. Comments Regarding Rejection of Independent Claim 7**

Independent claim 7 is directed to a keyboard including various letter keys, a tab key, a backspace key, at least one shift key and at least one function key, wherein multiple tab and backspace keys are centrally located within the letter keys and in a row above a home row. Pages 3 and 4 of the Examiner's Answer sets forth a rejection of this claim based on Watanabe et al. (JP 08249097) in view of Chen (U.S. Patent No. 5,739,776). Initially, with respect to the rejection, it is noted that the Examiner's Answer adds additional basis for the rejection of these claims which was not presented in the Final Office Action. That is, the Examiner now relies upon subject matter in claim 2 of Watanabe, along with comparisons between Figures 1 and 5b, and Figures 1 and 6, apparently to support a position that Watanabe discloses the potential relocation of tab and backspace keys on a keyboard. In essence, the Examiner appears to be indicating that since Watanabe teaches to shift backspace and tab keys from the more conventional location shown in Figure 5b to an upper central location as shown in Figure 1, that it would be obvious to move the backspace and tab keys anywhere on a keyboard. To this end, the Examiner then latches onto the teaching in Chen which locates tab key 15 and backspace key 16 directly above space bar 13.

As will be argued more fully below, it is respectfully submitted that the Examiner cannot properly pick and choose certain features from Chen to apply to Watanabe as, in the instant case, rearranging the tab and backspace keys has a significant effect on the overall rearrangement of at least many of the other keys. It is submitted that, even if one of ordinary skill in the art would consider modifying the Watanabe et al. arrangement in view of Chen, an angling of the letter keys would be created in order to establish a gap to accommodate backspace and tab keys. In addition, the backspace and tab keys would have to be located directly above the space bar as this is what is specifically taught by Chen. This arrangement does not address having the tab and backspace keys centrally located within the letter keys and located in a row above the home row. Again, Watanabe et al. has the tab and backspace keys in different rows.

In addressing the previous argument set forth by the Applicant to this rejection as outlined on page 8 of the Examiner's Answer, the Examiner first corrects a mistake in the prior Office Action in leading the Applicant to believe the Montgomery reference was being applied to this claim instead of the Chen patent. Although the Applicant argued that moving the backspace key down one row in Watanabe et al. would require a rearrangement of at least a certain number of additional keys, the Examiner indicated that this is not true. The Examiner instead indicates that you can switch the backspace key with the enter key or simply add another backspace key next to the tab key. The Applicant wonders where in the art these suggested modifications by the Examiner are being taught or suggested. Is there some piece of art that teaches to have backspace keys directly above and below one another? Is there some other reference that teaches to switch the position of a backspace key and an enter key? It should be realized that rearranging the keys is not a matter of aesthetics but has a major impact on the functionality of the entire keyboard, e.g., what fingers operate which keys, how easy the keyboard is to operate and learn, etc. Would anybody or better yet, has anybody, suggested placing tab and backspace keys in the same row, essentially located within letter keys, and above a home row?

From the bottom of page 8 to the top of page 9, the Examiner continues to argue that "since Watanabe et al. teach both tab (TA) and backspace keys (BS) are centrally located within letter keys and above the home row (see figure 1, claim 2) and Chen teaches a tab key (15) is in the same row of a backspace key (16) ", that there is a teaching to simply shift the backspace key down in Watanabe et al. The Applicant would argue to the contrary. In looking at the Chen reference, it is suggested to the Applicant to space and angle right and left letter key portions such that a gap is created therebetween within which can be positioned, directly above a space bar so as to be activated by thumbs of a user, tab and backspace keys. Even shifting the tab and backspace keys in Chen et al. up higher would have a dramatic impact on the use of the keyboard. That is, instead of utilizing thumbs to activate these buttons, index fingers would be utilized. This changes the function and operation of the entire keyboard. It is respectfully submitted that it is improper to pick and choose just a certain aspect from the Chen reference to modify Watanabe et al. in the manner set forth by the Examiner. The Chen patent specifically teaches to arrange a keyboard with a chamber between left and right sections and employing a crescent space bar which engages the tab key and the backspace key side-by-side. That is, it is only in operating the tab and backspace keys with a thumb that the user can retain his/her wrist constantly on wrist pad 19 as desired in accordance with Chen. This is covered throughout the patent and particularly set forth in disclosing the "mounting means" in claim 1. Unless the Examiner takes each of these teachings from the Chen reference, she is not treating the reference as a whole and what it would suggest to one of ordinary skill in the art, but rather is picking and choosing certain features shown in the drawings in order to reproduce what the Applicant of the present invention has derived.

### **III. Rejection of Independent Claim 13**

Independent claim 13 is particularly concerned with arranging at least three shift keys in a lower central portion of an array of keys of a keyboard, with the shift

keys being grouped directly adjacent one another and arranged in at least two rows at a position so as to be adapted to be engaged by thumbs of a user. In setting forth the three-way combination made by the Examiner, the Examiner must rely on replacing ALT keys with shift keys without any teaching in the art and, at the same time, maintain that these keys perform the same function. That is, in the combination presented, the Examiner is relying upon the arrangement in Watanabe which has a pair of shift keys spaced by a pair of ALT keys, with all the keys located in the same row. From the Applicant's viewpoint, the Examiner is relying upon the Harada et al. arrangement to merely indicate that shift and ALT keys can be located in two different rows. That is, as shown in this patent, a pair of shift keys are located at the outer edges of a key array in one row, with ALT keys being located at an outermost array position below the shift keys. The Examiner then relies upon the Microsoft Press Computer Dictionary in an attempt to equate ALT and shift keys.

First of all, with respect to this overall combination, the Applicant questions why Harada et al. does not teach to locate the shift and ALT keys at the outermost ends of the arrays in Watanabe et al., with the shift keys being located in one row at the outermost array and the ALT keys being located below the shift keys as shown in Harada et al. Instead, the Examiner again is picking and choosing certain teachings from the secondary reference, with these teachings in the particular case being to arrange ALT keys directly below shift keys. Going back to Watanabe et al. and attempting to follow the position taken by the Examiner, this modification would apparently result in the ALT keys dropping down one row and either the escape (ES) key and the key to the right thereof being raised one row or somehow the shift keys being laterally shifted inward and the escape and adjacent key being somehow repositioned entirely. Not only is the rejection not seen to be clear as to how the claimed invention is being accomplished by the combination presented, but this combination is seen to be based on clear hindsight reconstruction of the present invention.

In addition, the Applicant adamantly traverses the position taken by the Examiner that ALT keys and shift keys are identical such that it would "obvious to replace ALT keys by shift keys since they both have the same function..." To this end, it should be noted that a standard word processing program does not establish a capital letter upon holding down an ALT key and pressing a letter key. Instead, a shift key must be utilized for this purpose. This should be enough to clearly indicate that these keys are identical in function. The Examiner has relied upon a broad statement in a dictionary to directly equate these two keys. However, I am certain that the Examiner can also find a statement in a dictionary or book that indicates that a bicycle and a train are both modes of transportation. To this extent, these vehicles both perform the same function. However, a bicycle is not a train, a train is not a bicycle, and an ALT key is not a shift key.

#### IV. Final Comments

Based on the remarks presented in the Appeal Brief and those set forth above, it is believed clear that none of the rejections set forth by the Examiner properly address the claimed subject matter in the present application. With respect to the arrangement of three sequential multi-letter words in a single row, at best, the prior art combined by the Examiner only results in two multi-letter words being arranged adjacent one another. Without any teaching in the art, the Examiner simply holds that three multi-letter words would be obvious. Actually, the Office Action goes one step further in stating that it would be obvious to have three multi-letter words in a single row, with one of these multi-letter words being a four letter word and another one of the multi-letter words being a three letter word. With respect to the arrangement of the backspace and tab keys, the prior art teaches having backspace and tab keys in different rows or backspace and tab keys located adjacent each other in a totally different position than that set forth in accordance with the claimed subject matter. The Examiner, without any teaching in the art, takes the leap in positioning the tab and backspace keys in the particularly manner set forth in the present claims. With

reference to the shift and ALT keys, not only does the main and secondary references when combined not arrive in the recited locations of the shift keys, but the Examiner must specifically change ALT keys to shift keys without any particular teaching in the art.

As a review of the entire file history in this case will reflect, there is simply been a reluctance by this Examiner to allow any meaningful claims in this case. Late in the prosecution, the Examiner did indicate certain claims to be allowable. However, these claims are considered to be unacceptably narrow. For instance, claim 3 would cover the preferred embodiment of the invention wherein the home row sets forth the words "READ ON THIS", but presumably one could easily get around this arrangement by providing "READ ON THUS" or a similar change where, in reality, there are no teachings in the art that cover the broader claim aspects of claim 2 such that the Applicant should be entitled to this broader coverage. Claim 1 encompasses all the limitations of independent claims 2, 7 and 13 such that the Applicant disagrees with the rejection of this claim for an abundance of reasons.

The Applicant of the present invention is an independent inventor, has reviewed the prior art made of record in this case, and simply questions how any of these patents could issue but her application stands rejected. The '267 Klauber patent has broad claims to a standard keyboard with a smaller sized space bar and a control key adjacent thereto. The '776 Chen patent has claims directed to a keyboard with a crescent space bar located directly adjacent tab and backspace keys. U.S. Patent No. 5,352,050 made of record in this case is specifically directed to a keyboard which gets away from the QWERTY type arrangement and has claims directed to arranging certain letter keys next to each other. At this point, the Applicant is simply assuming that if the applications resulting in these patents were before the same Examiner as this case, they would never have issued, at least without an appeal. However, presumably these patents are valid and, based on the known prior art of record in this case, appropriately so. But for the same reasons, this prior art does not suggest the claimed features in the present application and, as such, it is respectfully submitted

that the Examiner's rejections should be reversed and the application be allowed to proceed to issue.

Respectfully requested,



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Date: December 30, 2002

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